

PATHOLOGY PEARLS

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Faculty of Medicine & Dentistry
Department of Medicine

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Healthy Communities.
Together.

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Objectives

- After this session, the attendee will have be able to:
 1. Discuss the importance of the GI Pathologist to the endoscopist and endoscopy nurse
 2. Review GI conditions where the endoscopic and pathologic findings are integral for the final diagnosis
 3. Identify cases that may be controversial and require pathology review

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Plenary Structure



1. Case presentation – clinical/endoscopic
2. Questions for the audience
3. Case review – pathology
4. Case Pearls



[PollEv.com/clarencewong441](https://poll-ev.com/clarencewong441)

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Background - working with Pathology



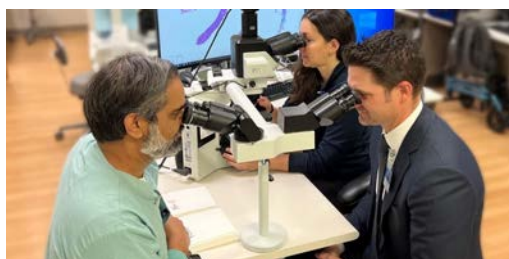
• GI Pathologists:

Multidisciplinary Team member
 -Program Plan
 -Implementation

Mapping: They don't "see" where you

Consultation
 Discussion
 Management

Require Clinical context



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Case #1



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Case #1



- 56 Caucasian Male with long history of GERD (decades)
 - Had been on antacids PRN for years
 - No red flags (dysphagia, weight loss, etc)
 - Smoker, BMI 36 (waist circumference 105 cm)
 - Started on a PPI x 2 months
- Referred for screening gastroscopy

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GERD and Barrett's – when to screen



GERD Primary Care Pathway

Quick links:

[Pathway primer](#)

[Expanded details](#)

[Advice options](#)

[Patient pathway](#)

4. Consider need to screen for Barrett's esophagus

Screening for Barrett's esophagus may be considered in males with chronic (> 10 years) and/or frequent (weekly or more) symptoms of GERD, but **only** if at least two risk factors are present:

- Age > 50 years
- Caucasian
- Presence of central obesity (waist circumference > 102 cm/40" or waist-hip ratio > 0.9)
- Current or past history of smoking
- Confirmed family history (first degree) of Barrett's esophagus or esophageal cancer

Females with chronic GERD have a substantially lower risk of esophageal cancer, so screening is not recommended. See expanded details.

Continue with pathway regardless of screening requirement and while awaiting results

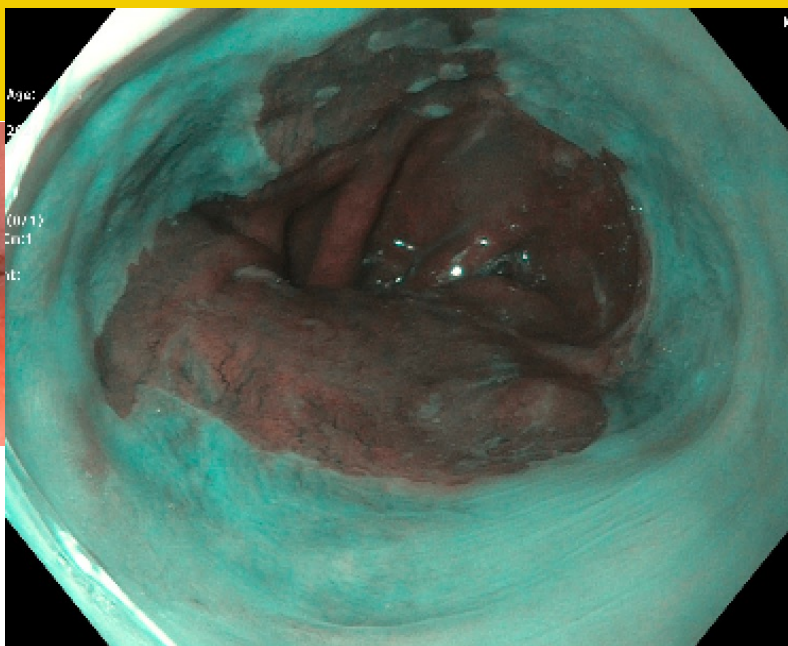


- <https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-dh-pathway-gerd.pdf>

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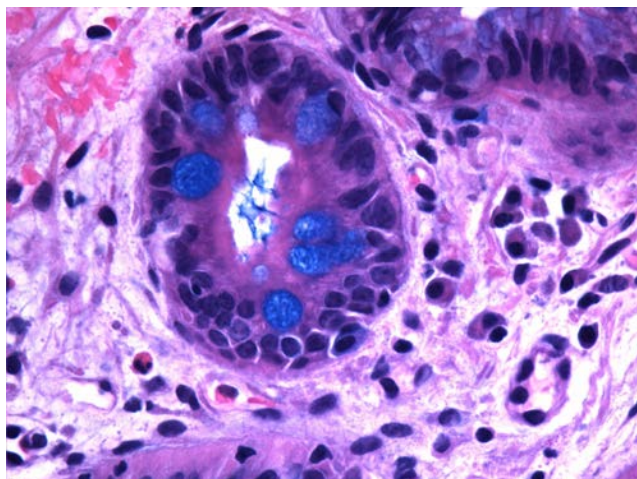
EGD #1:



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Pathology



- Definitive goblet cells present in gastric type mucosa

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Columnar type mucosa <1 cm above the GEJ Is it BE or gastric?



- A fairly common finding
- Gastric cardiac intestinal metaplasia (CIM) is associated with gastric Helicobacter infection; not presently recognized as pre-malignant, no screening program
 - Having gastric biopsies to rule out Helicobacter infection can help to settle this.
- Short segment BE: recognized as pre-malignant, screened

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Barrett's Diagnosis (ACG 2022)



2. We suggest that columnar mucosa of at least 1 cm in length be necessary for a diagnosis of BE, and that:
 - a. Patients with a normal-appearing Z line should not undergo routine endoscopic biopsies.
 - b. In the absence of any visible lesions, patients with a Z line demonstrating <1 cm of proximal displacement from the top of the gastric folds should not undergo routine endoscopic biopsies (quality of evidence: low; strength of recommendation: conditional).


Case #1b



Upper GI endoscopy was performed today under sedation with 3 mg of Versed and 75 mcg of Fentanyl. About 6 or 7 cm of Barrett's circumferential and 1 cm radial was seen from which multiple biopsies were taken. There was a narrowing of the GE junction with about a 2 cm ulcer from which multiple biopsies were seen. Hiatus hernia was seen. No obvious masses were seen. Multiple biopsies from the ulcer and Barrett's were taken.

NATURE OF SPECIMEN:
 Not clearly stated on the requisition. The jars are labelled as follows:

- A. Biopsy #1 GE junction ulcer.
- B. Biopsy #2 GE junction ulcer.
- C. Biopsy #3 Barrett's 1.
- D. Biopsy #4 Barrett's 2.
- E. Biopsy #5 Barrett's 3.
- F. Biopsy #6 Barrett's 4.
- G. Biopsy #7 Barrett's 5.
- H. Biopsy #8 Barrett's 6.
- I. Biopsy #9, Barrett's 7.
- J. Biopsy #10 Barrett's 8.
- K. Biopsy #11 Barrett's 9.



**DIAGNOSIS:****A. Gastro-esophageal junction ulcer, biopsies -**

- Cardia-type mucosa with ulceration and reactive changes.
- No intestinal metaplasia identified.

B. Gastro-esophageal junction ulcer, biopsies -

- Necroinflammatory debris consistent with ulcer bed.

C-F. Barrett's esophagus #1-#4, biopsies

- Barrett's esophagus.
- No dysplasia.

G-K. Barrett's esophagus #5-#9, biopsies -

- Barrett's esophagus with high-grade dysplasia.

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Case 1b**65M with SSBE, LGD**

Specimens: A) - Esophagus, 39 cm Esophagus at 8 O'clock
 B) - Esophagus, 39 cm Esophagus at 1 O'clock
 C) - Esophagus, 40 cm at 12 O'clock
 D) - Esophagus, 40 cm Esophagus at 1 O'clock
 E) - Esophagus, 40 cm Esophagus at 9 O'clock
 F) - Esophagus, 40 cm Esophagus at 6 O'clock

A.esophagus at 39 cm, 8 o'clock position, biopsy:
 Squamocolumnar mucosa with no intestinal metaplasia, dysplasia or malignancy

B.esophagus at 39 cm, 1 o'clock position, biopsy:
 Barrett's esophagus with low-grade dysplasia
 Negative for high-grade dysplasia and malignancy

C. Esophagus at 40 cm, 12 o'clock position, biopsy:
 squamocolumnar and oxyntic mucosa with mild reactive changes
 Negative for intestinal metaplasia, dysplasia and malignancy

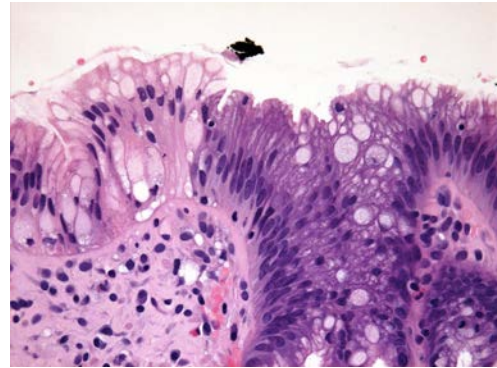
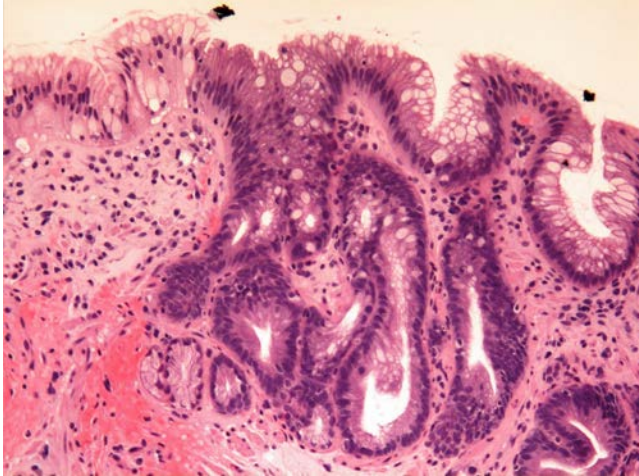
D.esophagus at 40 cm, 1 o'clock position, biopsy:
 Squamocolumnar mucosa with intestinal metaplasia
 Negative for dysplasia and malignancy

E.esophagus at 40 cm, 9 o'clock position, biopsy:
 Oxyntic mucosa with no significant abnormality

F.esophagus at 40 cm, 6 o'clock position, biopsy:
 Squamocolumnar mucosa with no intestinal metaplasia, dysplasia or malignancy
 Electronically signed by Brinda Balachandra, MD on 13/7/2021 at 10:36 AM

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Pathology – Low grade dysplasia



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Low grade dysplasia

- Nuclei become crowded, dark, stratified
- Nuclear changes do not mature to the surface (Surface involved)
- Mild crowding of glands
- May see mitotic activity on the surface (KI 67 can help)

Sharma P and Montgomery E, Pathology 2013: 273-285.

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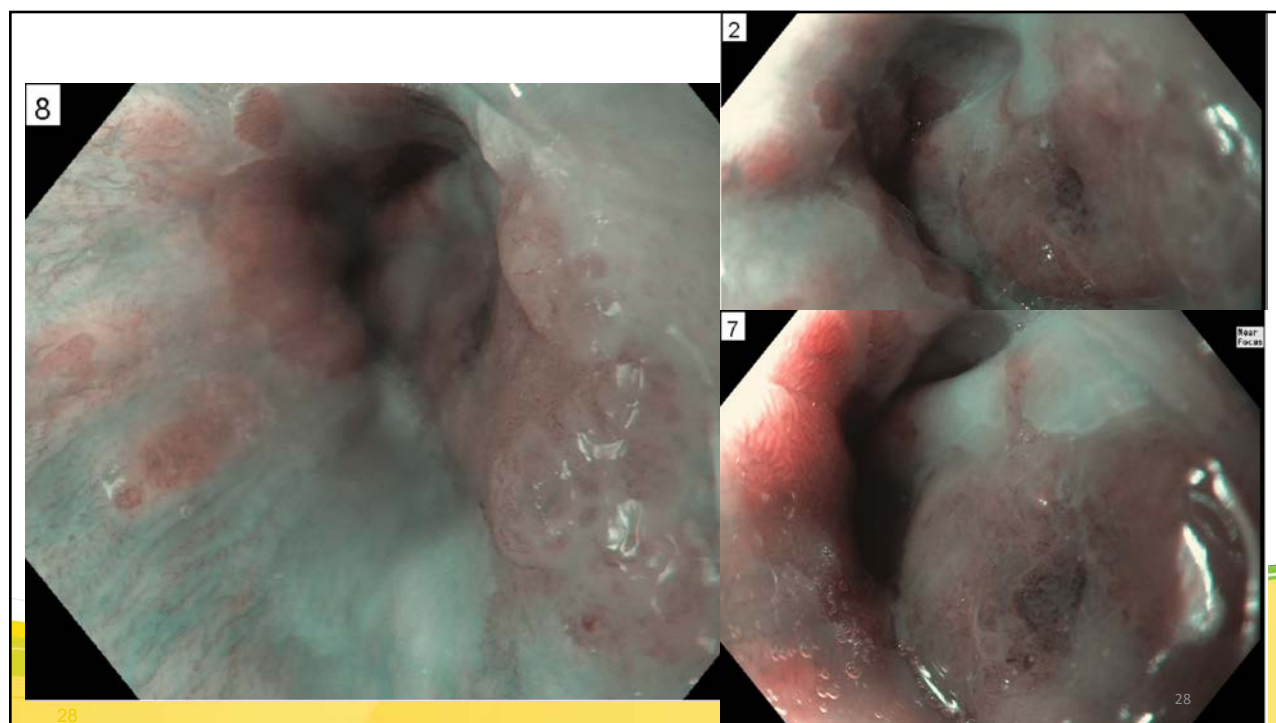
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Difficulties in BE dysplasia

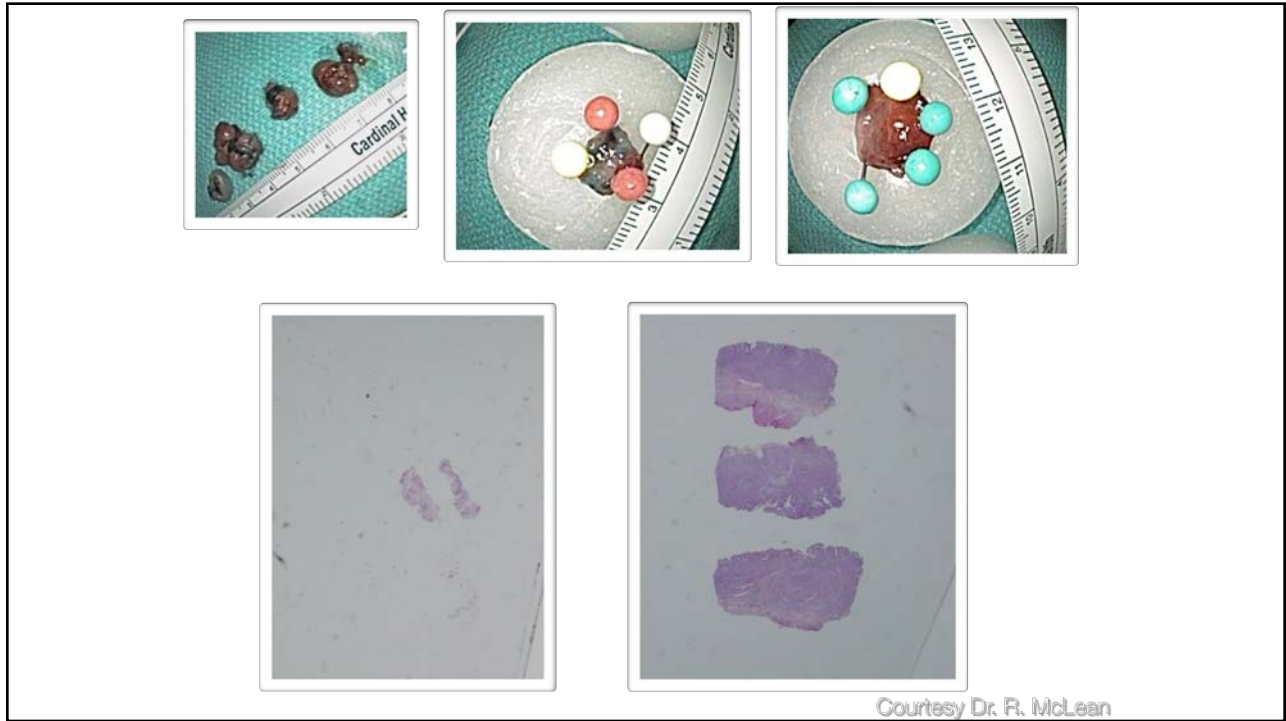
- There are significant difficulties in distinguishing between reactive changes and dysplasia, and dysplasia and malignancy
- Most marked for LGD: Reactive changes in a background of inflammation will mimic dysplasia
- Inter-Observer Kappas;
 - HG/CA - Good
 - LGD and Indefinite – Fair to Poor

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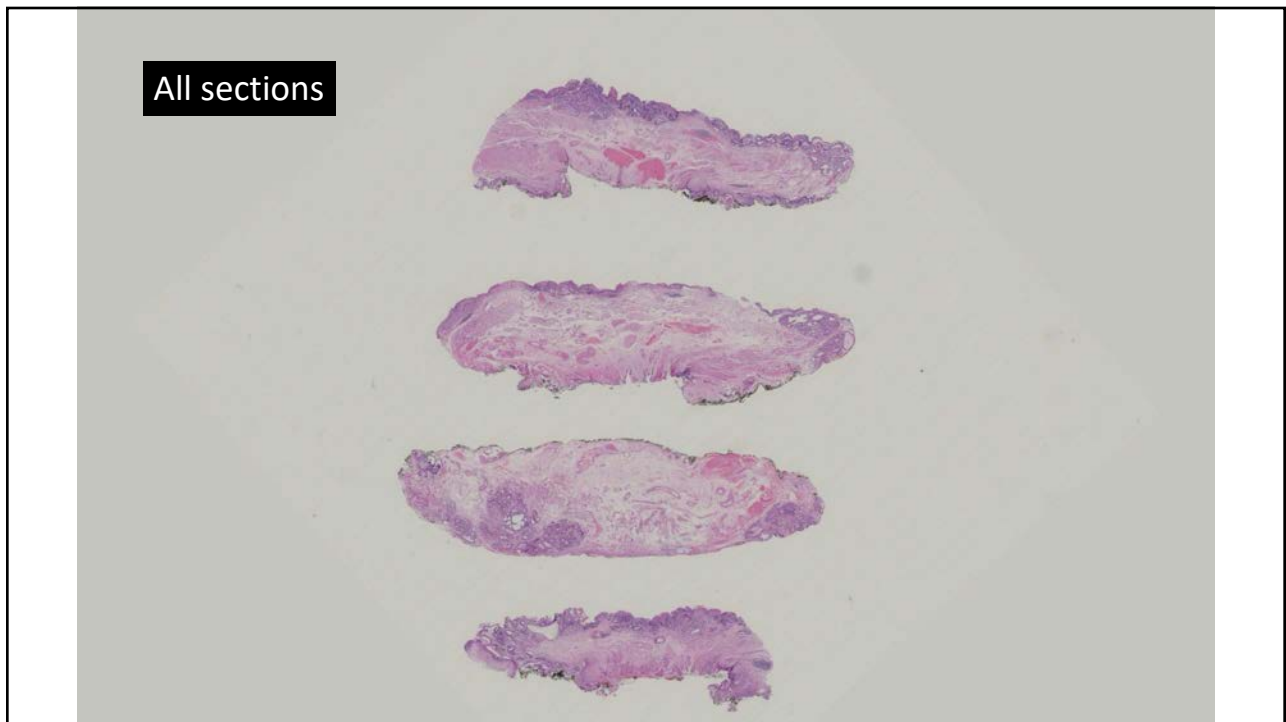
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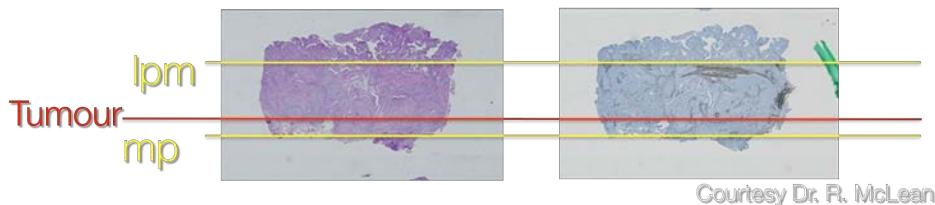
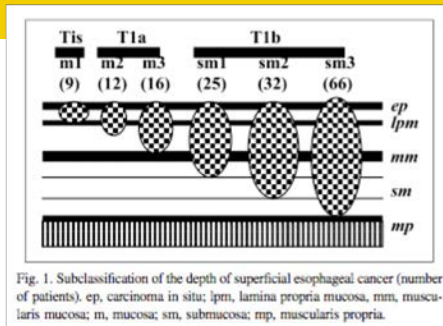


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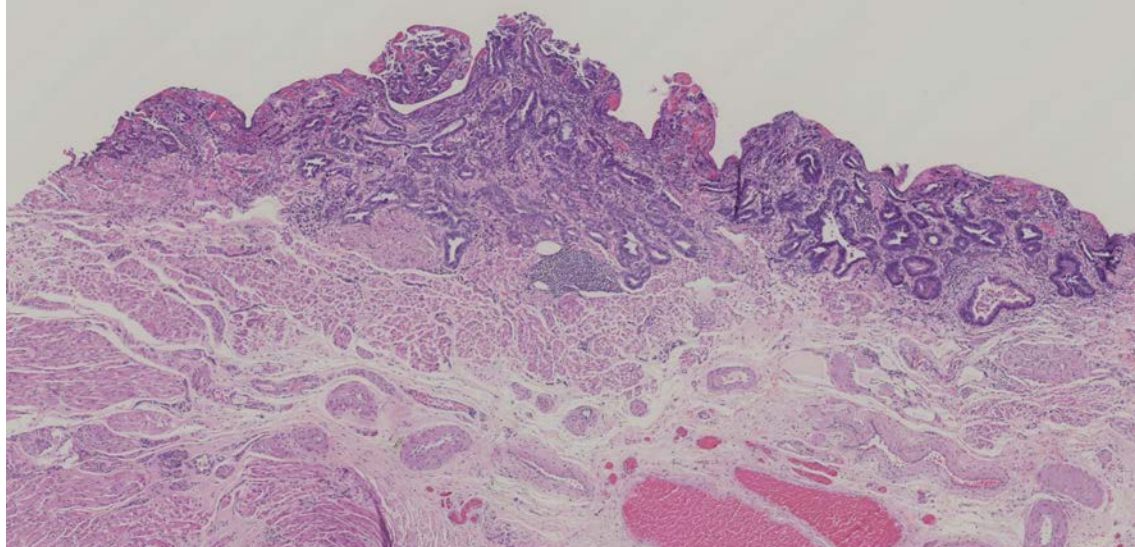
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Shimada Scale - T1 Staging



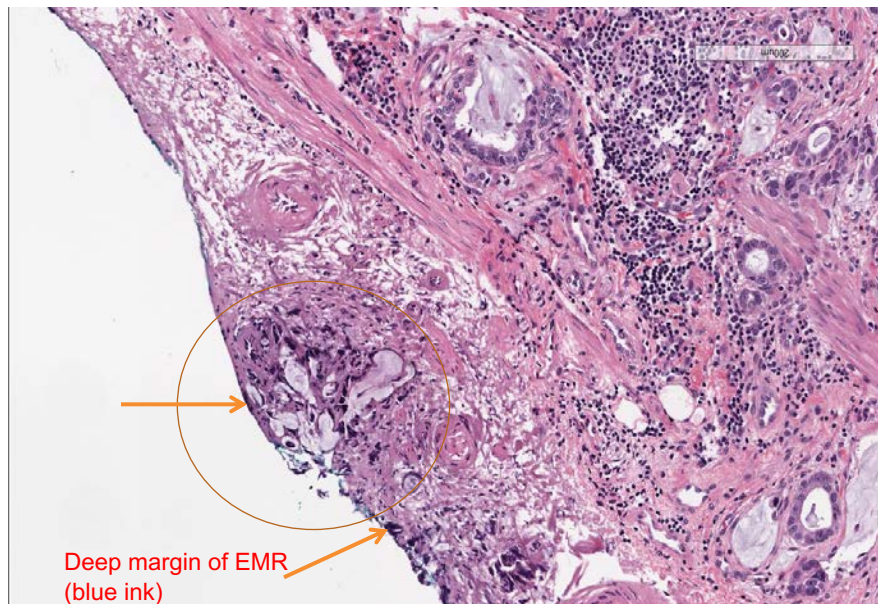
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Intramucosal carcinoma section 1



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Positive deep margin on well-oriented EMR



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Barrett's Pathology Pearls



Document Carefully

- Distance from incisors
- Identify nodules (+ clock position)
- Separate Levels

Biopsy SCJ? Who to Screen?

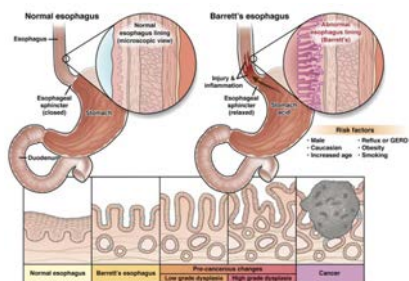
- Inspect carefully
- Guidelines & Pathways
- Targeted biopsies and Label

Indefinite or LGD

- Review with Pathologist
- Consult GI Path?
- Re-treat and repeat biopsies?

Biopsy Nodule?

- Take 1-2 bites?
- Can delay EMR
- Label precisely



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Case #2



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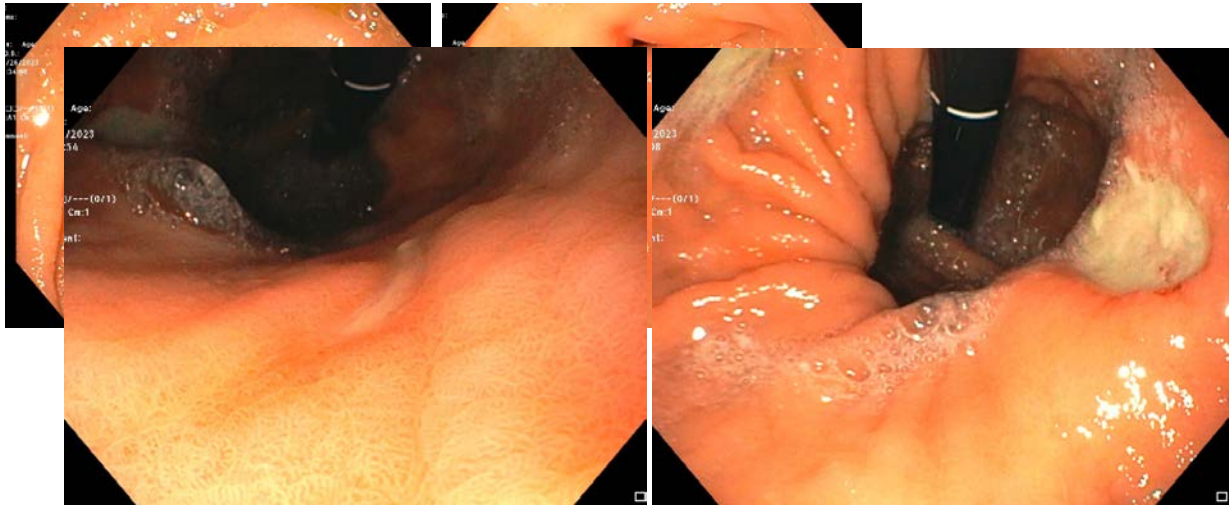
Case #2



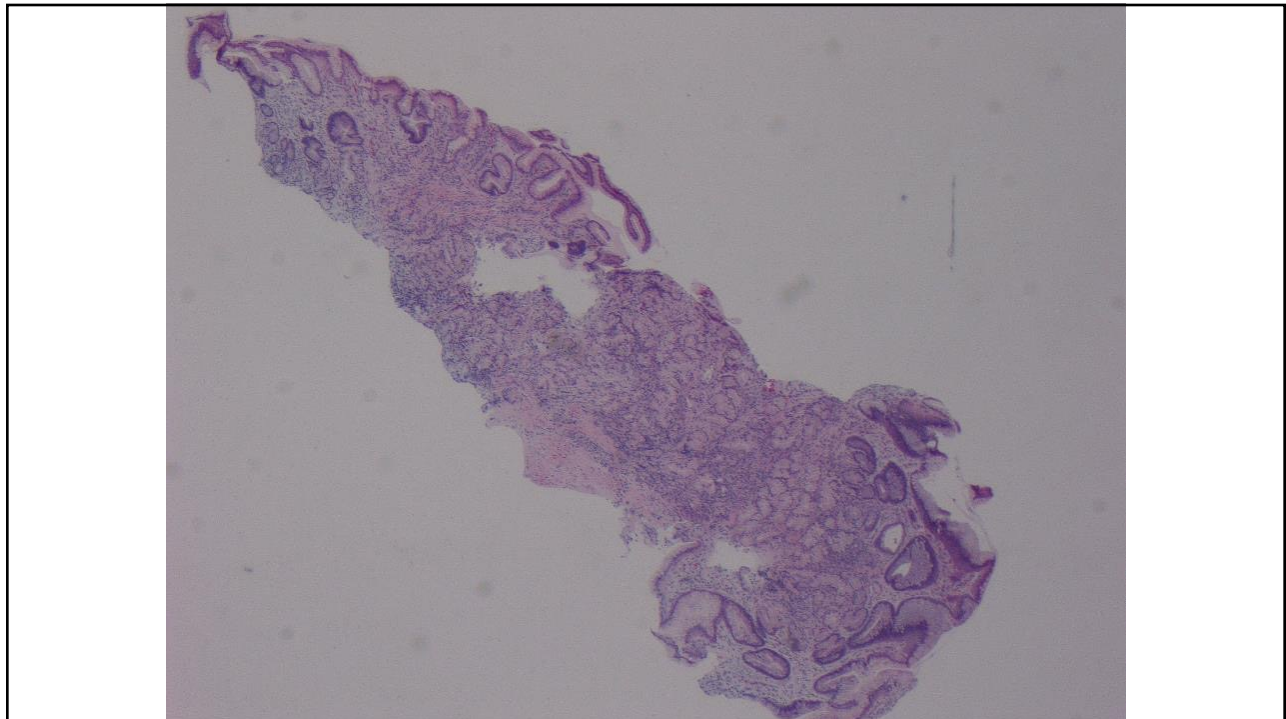
- 59 presents with black stools
 - Recent humeral fracture
 - On naproxen 8 tabs per day x 2 months
 - Black stools 3 weeks ago (3BM/day x 3 days), then stopped
 - Started on lansoprazole 1 week ago, but presented to ER with increasing dyspepsia and fatigue
 - Hb 45

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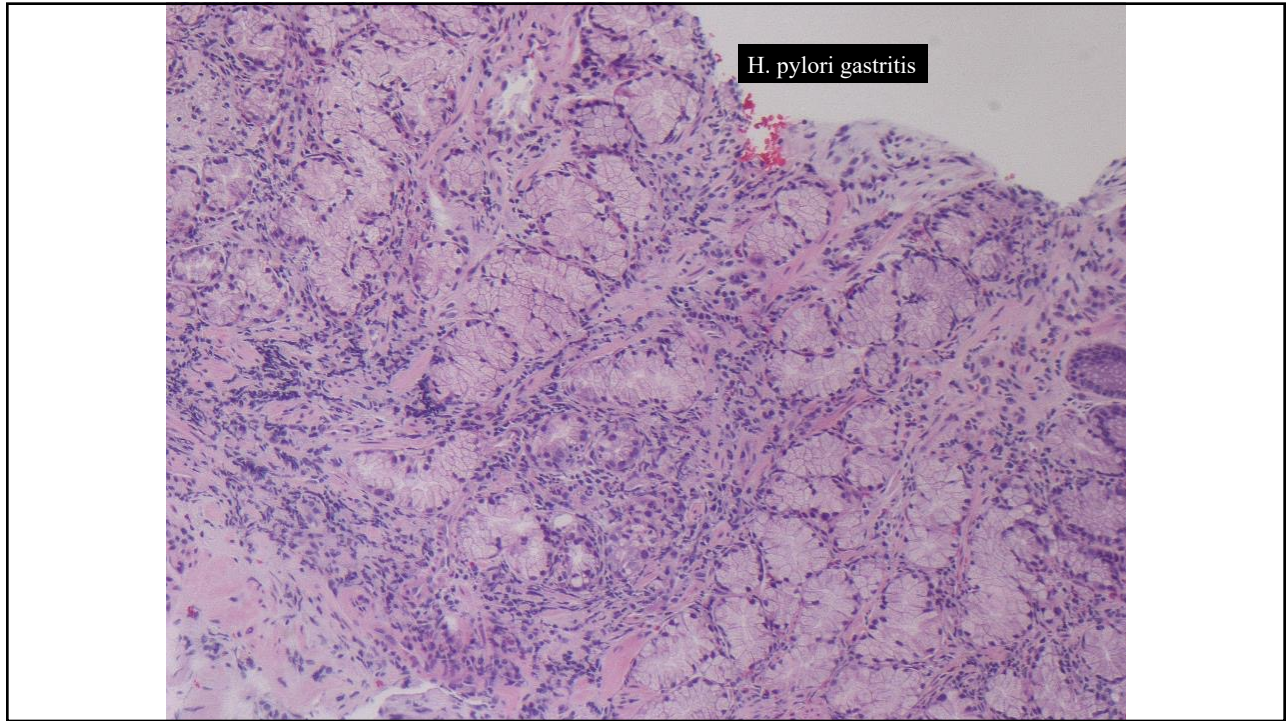
Case #2 Endoscopy – EGD



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Hp Therapy




Helicobacter Pylori (*H. pylori*) Primary Care Pathway

Quick links: [Pathway primer](#) [Expanded details](#) [Advice options](#) [Patient pathway](#)

4. Treatment (for patients not allergic to penicillin) ➤

- First Line: CLAMET Quad (PAMC) or BMT Quad (PBMT)
- Second Line (if needed): CLAMET Quad (PMAC) or BMT Quad (PMBT)
- Third Line (if needed): Levo-Amox (PAL)
- Fourth Line (if needed): Rif-Amox (PAR) or refer to GI

*See expanded details for patients allergic to penicillin/amoxicillin



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How to get Hp cultures



1. **Portagerm transport media** (TM) tube should be stored frozen -20C until the day biopsy is taken. Defrost to room temperature just prior to collection.
2. Follow "Collection Instructions" as found in the link above. <https://td.dynalife.ca/Tests/Details/1468?newPage=0>
3. Once **antral & gastric body tissue samples** are collected and each placed inside each Portagerm TM, place both tubes immediately in a regular sized styrofoam cooler containing at least **2 dry ice blocks**. Keeping the biopsied tissue at **-70C** for the whole duration of the transport will be key in maintaining viability for a few days. The stability/viability rate should be higher than that reported in the attached article.
4. Pack all requisition, etc, along with this container and forward it to us **ASAP** (on a stat basis). Ideally, the samples should arrive to us within 24h of collection to ensure H pylori can still be isolated in culture. If well sealed, the dry ice in the container (as specified) should last for about 24 hours.
5. Forward the samples to Edmonton DynaLIFE (BaseLab) (now known as APL Community Lab Services) through the available DynaLIFE/APL courier in each hospital location.
 - Address: #200, 10150 - 102 Street, Edmonton, AB T5J 5E2

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H pylori Pearls: GU & H. pylori



Biopsy Ulcer edge
on index case

Book Followup
EGD

Biopsy for H.
pylori

- Body & Antrum

Indicate you are
looking for
H.pylori & review

Culture: In
resistant to treat

- HpSTAT

Initiate
Treatment

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Case #3



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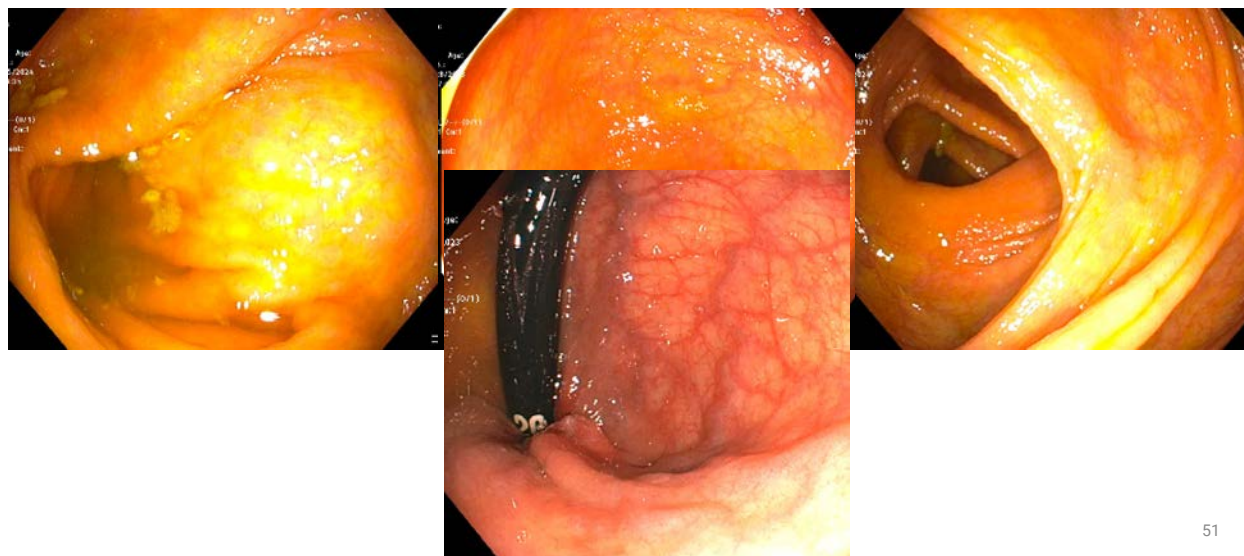
Case #3



- 72F with diarrhea
 - Watery, intermittent frequency, incontinence
 - No abdominal pain
 - No rectal bleeding (?outlet)
 - Some weight loss
 - Colonoscopy
 - 2008 – colon biopsies revealed intraepithelial lymphocytes, melanosis, but reported as normal
 - 2012 – colonoscopy repeated – no biopsies taken
 - 2018 – repeat colonoscopy

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Case #3 Endoscopy

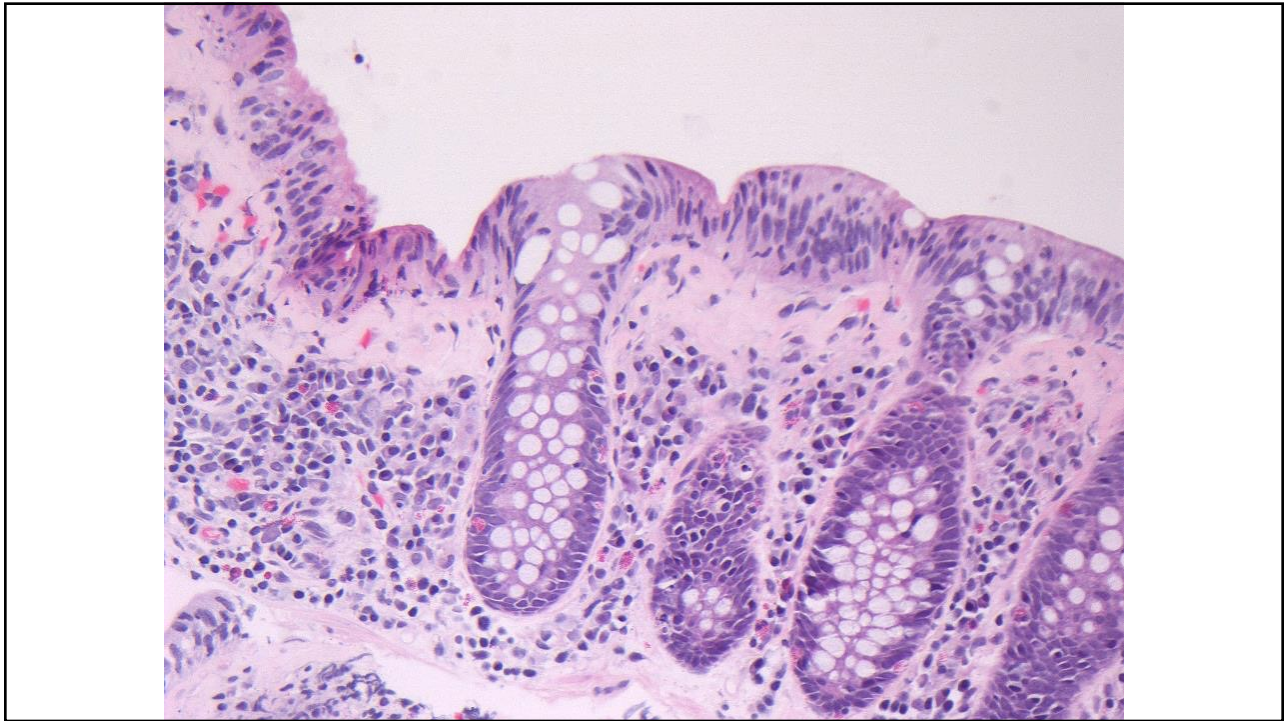


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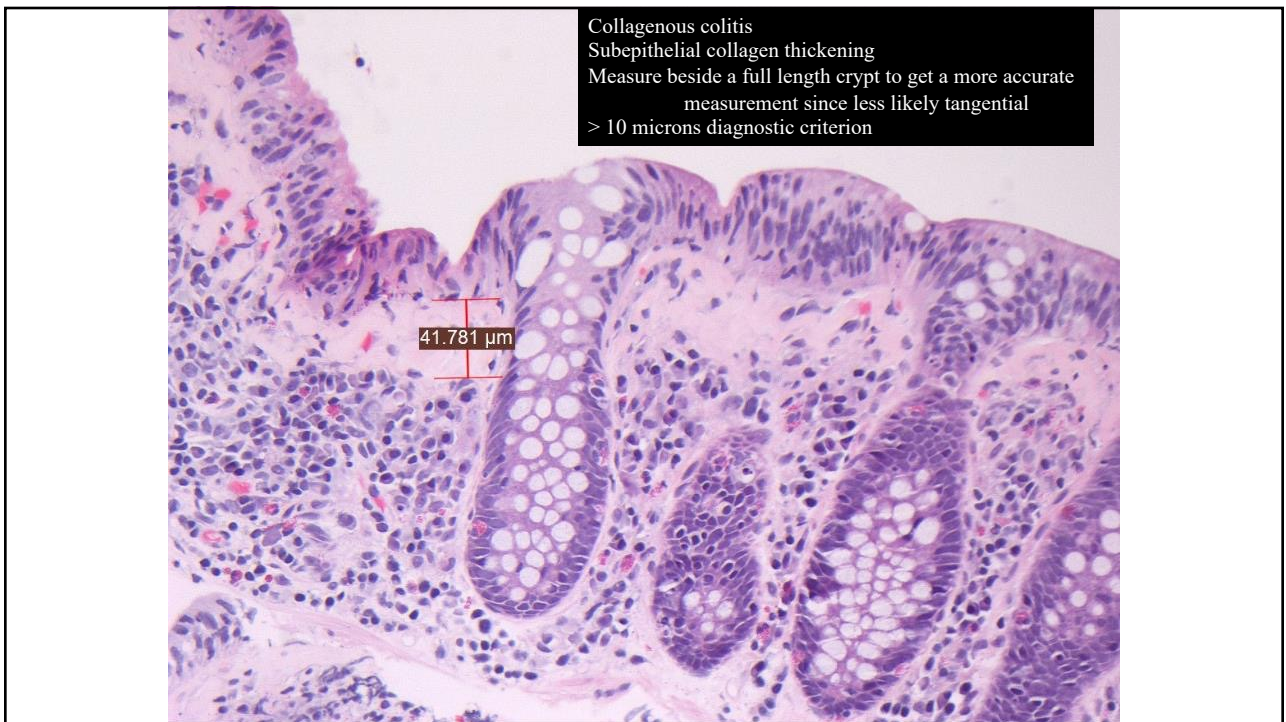
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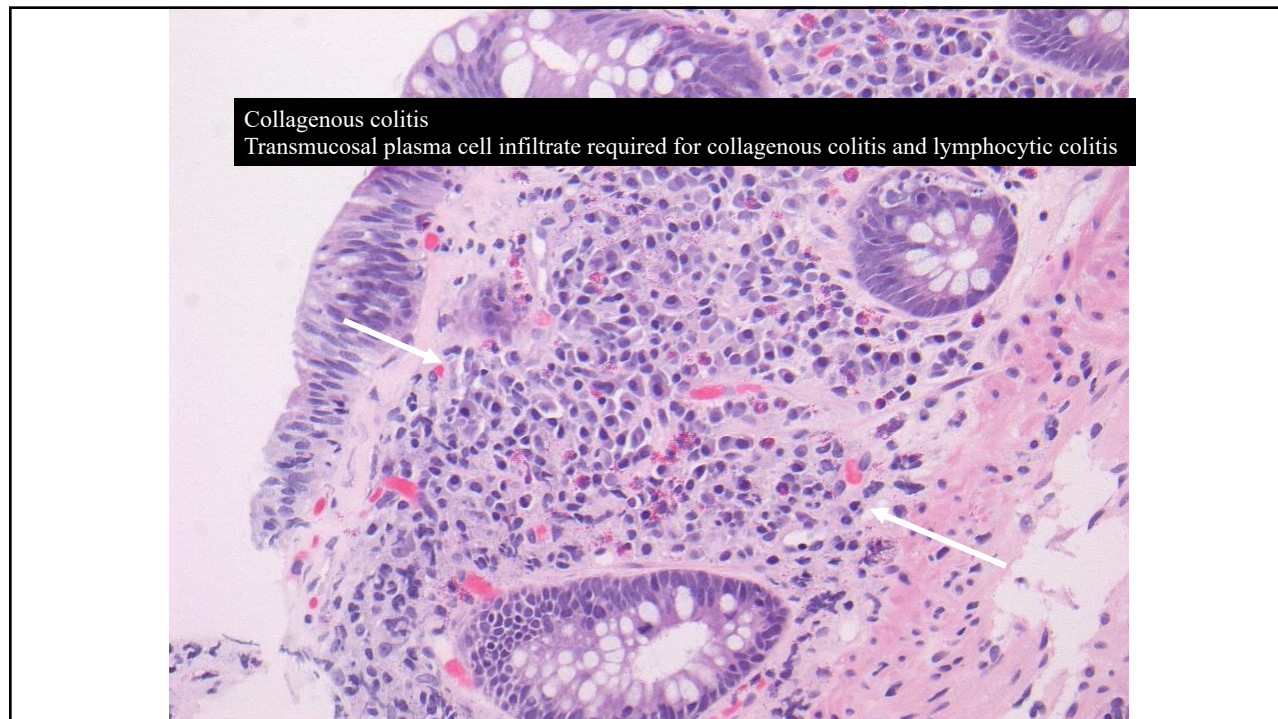
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Pathology



FINAL DIAGNOSIS:

1. Transverse colon, mucosal biopsies:
No pathologic diagnosis.
2. Left colon, mucosal biopsies:
Collagenous colitis.
3. Sigmoid colon, mucosal biopsies:
Collagenous colitis.
4. Anus, mucosal biopsies:
Rectal mucosa with stromal fibrosis and reactive epithelial atypia.

Clinical Information

History of microscopic colitis, normal appearance ; Normal colonoscopy

Final Diagnosis

- A. Right colon, biopsy:
- Compatible with collagenous colitis.
- B. Transverse colon, biopsy:
- Compatible with collagenous colitis.
- C. Left colon, biopsy:
- Compatible with collagenous colitis.
- D. Rectum, biopsy:
- Compatible with collagenous colitis.

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Microscopic Colitis Primer



- Considered an inflammatory bowel disease
 - Not considered a precursor
 - Does not have cancer risk
- Watery, nonbloody diarrhea
 - Incontinence - ?IBS
- Risk Groups
 - Age 50
 - Female
 - Smoking
 - Medications (NSAIDs, PPI-lansoprazole, ranitidine)
- Two forms
 - Collagenous Colitis
 - broad subepithelial collagen band, >10 μ m in thickness
 - Lymphocytic Colitis
 - increased number of intraepithelial lymphocytes (IEL), with >20 IELs per 100 epithelial cells
- May be patchy throughout the colon
- No visible lesion
- Rule out celiac disease

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Microscopic Colitis Therapy



- Identify triggering cause

Loperamide (or other antidiarrheals)	2 mg po, when necessary (up to eight tablets daily)
Bismuth subsalicylate	3 \times 262 mg tablets po tid \times eight weeks
Mesalamine	800 mg po tid \times six months or longer
Cholestyramine	4 g po od \times six months or longer
Budesonide	9 mg po od (or in a tapering course) \times six to eight weeks to induce response. 6 mg po od \times six months or more to maintain response

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Pathology Pearls: MC



Suspect with
chronic diarrhea

Patchy
throughout colon
(Separate bites)

Can vary over
time

Two Forms:
CC & LC

Treatment is safe
to start

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Case #4

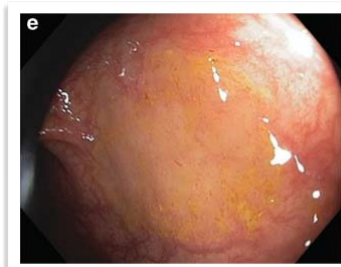
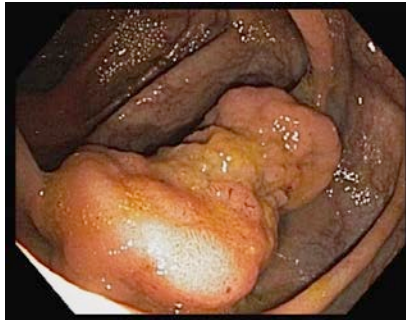


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Case #4

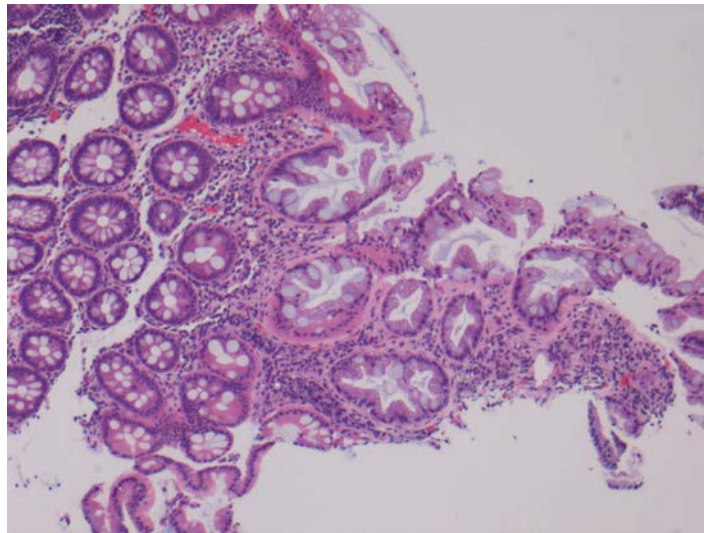


- 55M asymptomatic, FIT +



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Hyperplastic polyp



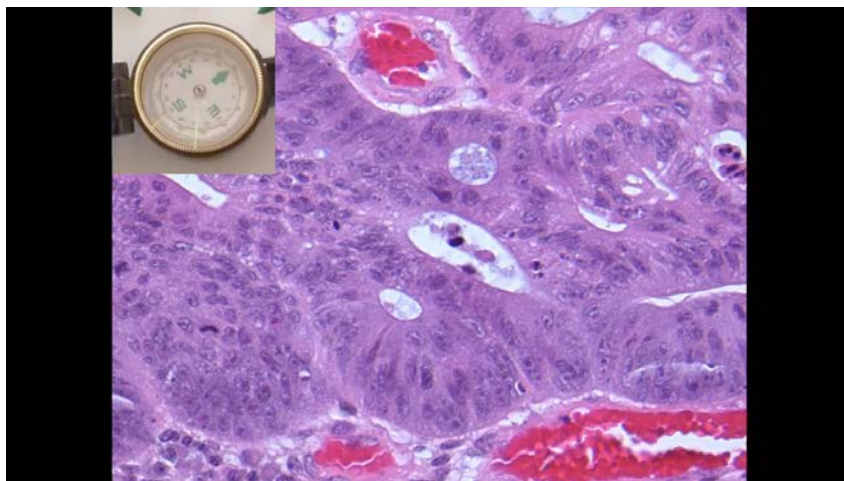
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Low grade dysplasia tubular adenoma, colon



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High grade dysplasia



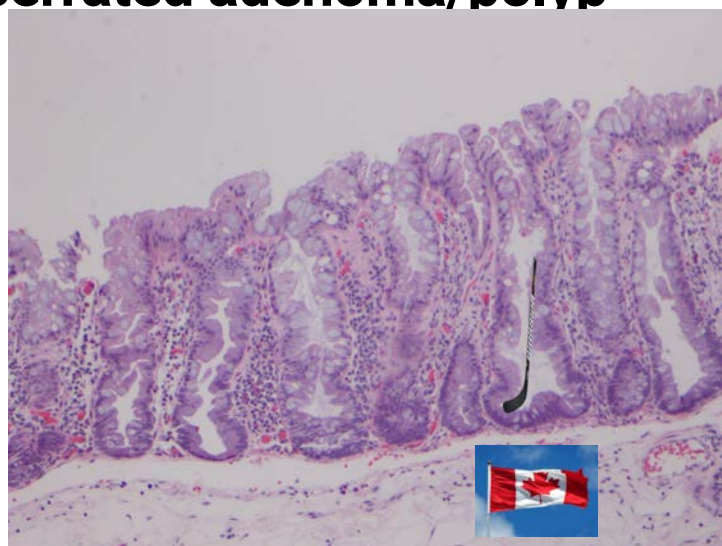
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Sessile serrated adenoma/polyp previously "hyperplastic"



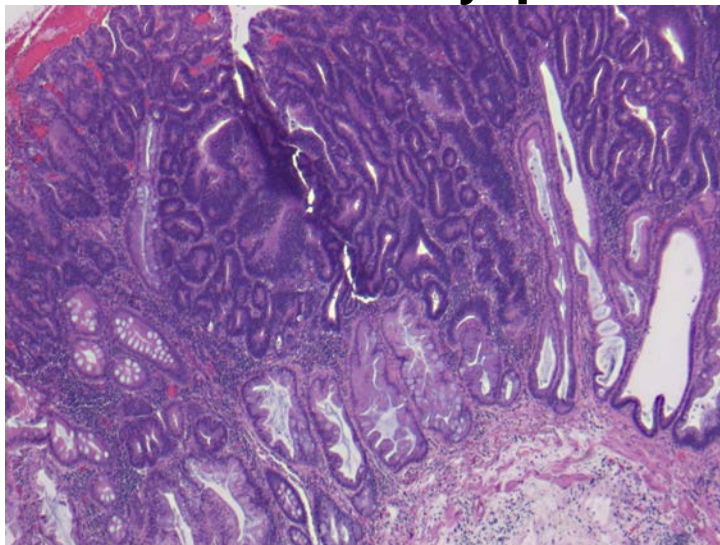
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Sessile serrated adenoma/polyp



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SSA/P with conventional dysplasia



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National Colorectal Cancer Screening Network

Classification of Benign Polyps

Pathology Working Group Report

June 2011

Table 1: Classification of Adenomatous and Serrated Polyps

Category	Polyp Type	Qualification re Dysplasia
Conventional Adenomas	Tubular adenoma	± high-grade dysplasia/invasive adenocarcinoma
	Tubulovillous adenoma	
	Villous adenoma	
Serrated Adenomas	Sessile serrated adenoma/polyp	± dysplasia (low/high-grade)
	Traditional serrated adenoma	± high-grade dysplasia
	Serrated polyp, unclassified	
Hyperplastic Polyps		

And.....

Serrated polyp unclassified

Mixed or combined polyps

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Requested Format

CLINICAL HISTORY:
Fit+

FINAL DIAGNOSIS:

1. Proximal transverse colon polyp #1, biopsy:
 - Tubular adenoma
 - Negative for high grade dysplasia
2. Transverse colon polyp #1, biopsy:
 - Tubular adenoma
 - Negative for high grade dysplasia
3. Transverse colon polyp #2, biopsy:
 - Tubular adenoma
 - Negative for high grade dysplasia
4. Distal transverse colon polyp, biopsy:
 - Tubular adenoma
 - Negative for high grade dysplasia
5. Rectal polyp, biopsy:
 - Tubular adenoma
 - Negative for high grade dysplasia

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ACRCP 2023 Post-Polypectomy Guidelines



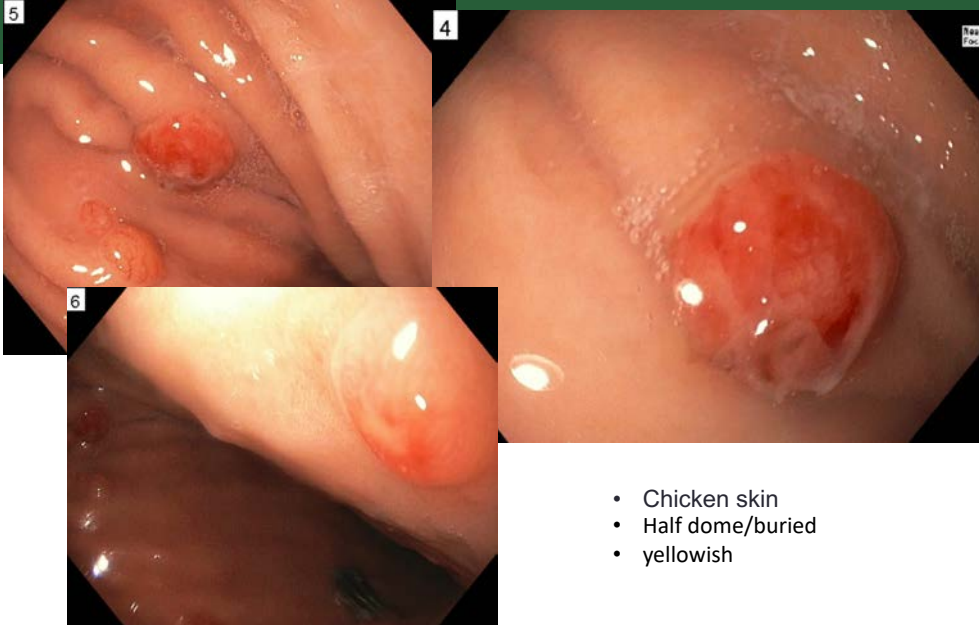
Initial Colonoscopy Findings	Recommendations for next test and interval
Normal or no polyps	FIT screening in 10 years ⁱ
Hyperplastic polyp(s) <10mm	
Hyperplastic polyp(s) ≥10mm	Colonoscopy in 3 years if proximal to sigmoid colon ⁱⁱ Colonoscopy in 5 years if in rectosigmoid
Adenoma	
1 - 2 tubular adenoma(s) <10 mm	FIT screening in 5 years
3 - 4 tubular adenomas <10mm	Colonoscopy in 5 years
5 - 10 tubular adenomas <10mm	
≥10mm in size	Colonoscopy in 3 years
Villous histology or high-grade dysplasia	
>10 tubular adenomas	Colonoscopy in 1 year and genetic counselling ⁱⁱⁱ
Sessile Serrated Lesion (SSL)	
1 - 2 SSL(s) <10 mm	Colonoscopy in 5 years
3 - 10 SSLs <10mm	
≥10 mm in size (any number)	Colonoscopy in 3 years
[with] dysplasia (any size)	
Traditional serrated adenoma (any size)	
Serrated polyposis syndrome ^{iv}	Colonoscopy in 1 years



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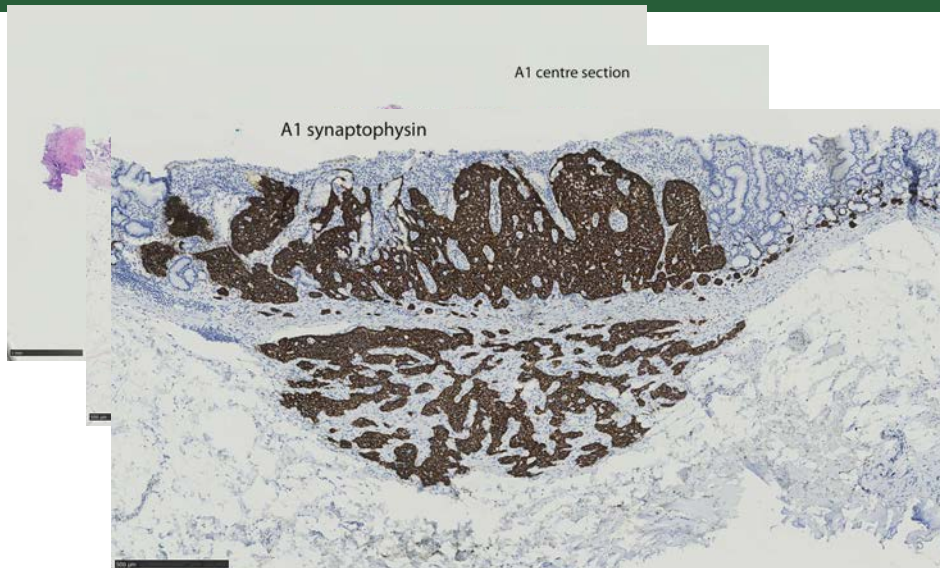
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Caution – rectal polyps



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Pathology



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Polyp Pearls



Still need pathology

Separate polyps and location

Guidelines need size, location and histology

Beware the chicken skin polyp!

Never tattoo under a polyp

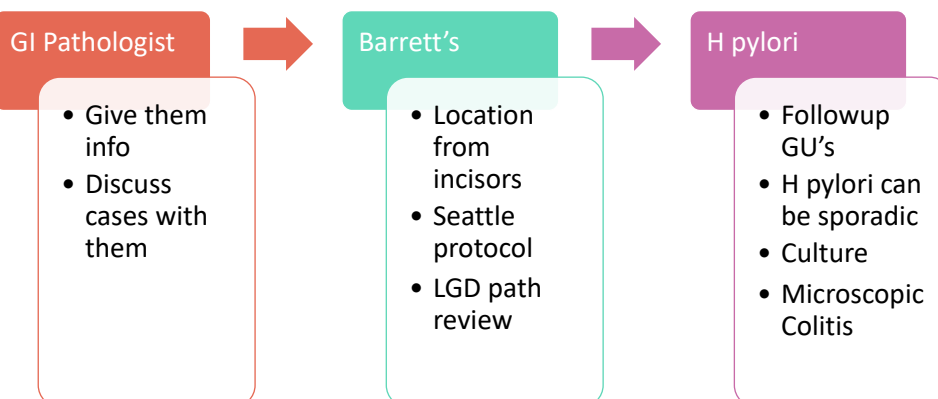
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Summary



- Today we have reviewed:



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Summary



Microscopic Colitis

- Varies in location & time
- start treatment



Polyps

- Need path
- size, location and number

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Thank you! Comments? Questions?



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